IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of: Phillip Koh-Kwe Hsu, et al.	)	
	)	Art Unit: 3628
Serial No.: 09/687,892	)	Examiner: Pwu, Jeffrey C.
Filed: October 13, 2000	)	Docket No.: 4797/48
For: **SYSTEM AND METHOD FOR DELIVERING A FINANCIAL MESSAGE**	)	Appeal No.: Not yet assigned

APPEAL BRIEF UNDER 37 C.F.R. §1.192

Mail Stop: Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the decision of Examiner Jeffrey C. Pwu, Group Art Unit 3628, in the Final Office Action of August 25, 2004, rejecting claims 1-21 in the present application and making the rejection final. A Notice of Appeal was filed on November 24, 2004.

This paper includes items (1) through (9) as required under 37 CFR 1.192(c) and MPEP § 1206 (herein labeled as I through IX).

The Commissioner is hereby authorized to charge the Appeal Brief filing fee of $500.00, as well as any additional fees, which may be required or credit any overpayment, to Deposit Account No. 02-4270.

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I. REAL PARTY IN INTEREST

The real party in interest of the instant application is UBS FINANCIAL SERVICES INC., a corporation organized and existing under the laws of the State of Delaware, U.S.A., having a place of business at 1200 Harbor Boulevard, Weehawken, New Jersey.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences.

III. STATUS OF THE CLAIMS

Claims 1-21 are pending and stand rejected in the present application. In the final Office Action dated August 25, 2004, claims 1-21 were rejected as being anticipated under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,554,418 (Toy).

IV. STATUS OF AMENDMENTS

There are no amendments filed subsequent to final rejection. The Amendment and Response to Office Action dated May 10, 2004, filed prior to final rejection, amending claims 1-3, 5-12, 14-15, and 18-20 was entered. No other claim amendments were filed.

V. SUMMARY OF THE INVENTION

The present invention is directed to a computer system and method that allows an internal user, such as a financial advisor, to intervene in the process of delivering a financial message to a client user prior to the delivery of the message. *See* Page 6, lines 9-17.

Particularly, with regard to independent claim 1, and claims 2-16 dependent thereon, the invention is directed to computer systems for delivering at least one financial message to a client user regarding financial activity. The computer systems comprise at least one computing device that comprises a message creation system program for monitoring financial activity, creating messages as requested by the client user regarding the activity, and delivering the messages created, and an intervention system program that allows an internal user of the system, such as financial advisor, to add and/or edit content of a message created for a client user prior to delivery of the message created for the client user.

With regard to independent claim 18, and claims 19-21 dependent thereon, the invention is directed to methods computerized methods for delivering financial messages to a client user that comprise the steps of: gathering client user message preferences from the client user, creating a client user message in accordance with the client user message preferences, and providing a user interface that allows an internal user to add a personalized note to the client user message prior to delivery.

Regarding claim 17, the invention is directed to an internal user interface system for use by an internal user of a financial message delivery system that includes means for means for designating internal user message preferences, for designating client user message preferences, for viewing client user or internal user messages, for replying to client user messages, for creating messages, and for searching for messages for a client user.

VI. ISSUES

The first issue in this appeal is whether claims 1-21 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,554,418 to Toy.

VII. GROUPING OF THE CLAIMS

With regard to the rejection of claims 1-21, claims 1-16 and 18-21 are treated as a first group, claim 17 is treated as a second group, and claims 4-16 and 19-21 are treated as a third group.

VIII. ARGUMENT

A. GROUP ONE CLAIMS

Claims 1-16 and 18-21 were rejected as being anticipated by U.S. Patent No. 4,554,418 to Toy. To anticipate a claim, a single prior art reference must teach each and every element of the claim either expressly or inherently. *See* Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 31 (Fed. Cir. 1987).

Toy relates to an information monitoring and notification system. See Abstract. Toy discusses monitoring a continuous stream of input data, and notifying users upon the occurrence of preselected events of interest. See col. 3, lines 24-27. Upon the occurrence of the preselected event of interest, the system initiates "an appropriate contact sequence" to notify the user of thereof. See col. 3, lines 46-50. "The contact sequence is designed to notify users directly in near real time" of the occurrence of the specified event. Col. 3, line 67 – col. 4, line 3; see, also, col. 4, lines 25-26. In this respect, the system will attempt to contact the user beginning with a primary contact address, followed by "alternative contact addresses contained within [a] hierarchical listing" in the event successful contact is not established with the user. See col. 4, lines 13-16. Once contact is made, the message is delivered to the user for "near instantaneous" notification. Col. 4, lines 33-38.

The Toy system may also include user contact verification for added security. See col. 4, lines 16-21. In this instance, the system requires that the user verify that contact with the particular user has been established prior to message delivery. See id. If user verification is not established, the system may attempt repeatedly to contact the user at the primary or alternative contact address. See col. 4, lines 33-41. If contact is not established, the system may either terminate the attempt or reinitiate the contact sequence after a preselected delay period. See col. 4, lines 41-44.

In contrast, the present invention is drawn toward a computer system and method that allows an internal user, such as a financial advisor, to intervene in the process of delivering a financial message to a client user prior to the delivery of the message.

Particularly, independent claim 1, and claims 2-16 dependent thereon, feature, among other things, a message creation system program configured to monitor financial activity, create messages as requested by the client user regarding the activity and deliver messages, and an intervention system program that allows an internal user of the system, such as financial advisor, to add and/or edit content of a message created for a client user prior to delivery of the message to the client user. In this respect, an internal user of the present invention is allowed to intervene prior to message delivery. Toy does not disclose such a system.

Independent claim 18, and claims 19-21 dependent thereon, feature the step of providing a user interface that allows an internal user of the system to add a personalized note prior to the delivery of the system-generated message. In this respect, an internal user of the present invention is allowed to intervene prior to message delivery, for example, in order to provide relevant proactive advice. Toy does not disclose such a feature.

The Examiner asserts at paragraph 4 of the Office Action that Toy discloses a system and method for delivering financial messages to a client user regarding financial activity, wherein, with reference to Toy's verification step 141, the system and method include an intervention system configured to allow an internal user of the system to add or edit content of a message to a client user prior to delivery. The Examiner is incorrect. As noted above, the verification step is used in Toy to verify that the message is being delivered to the proper user for added security, and is not an intervention step, as suggested by the Examiner, that allows an internal user of the system, such as financial advisor, to add and/or edit content of a message created for a client user prior to delivery of the message to the client user.

In response to this argument, the Examiner further asserts that Toy discloses this feature with reference to col. 7, lines 29-37. Particularly, the Examiner asserts that "an independent processor ... may be programmed to handle functions such as protocol conversion, format conversion, and error checking and correction, ... thus providing intelligence to the communications line involved. This Examiner is incorrect on this point as well. Toy fails to provide any particular meaning to these terms. Thus, the plain meaning of the terms to those skilled in the art shall apply. *See* generally MPEP 2111.01. In the context of communication line processing, protocol conversion and format relates to a data communication procedure that permits computers operating on different protocols or formats to communicate with each other. Error checking and correction relates to a procedure for checking packets transmitted over a network to determine if the data has been damaged and resending discarded packets. *See* Newton's Telecom Dictionary pp. 315, 355, and 680 (Feb. 2000) (attached as Appendix B). These procedures do not allow an internal user to edit messages prior to delivery as claimed.

B. GROUP TWO CLAIMS

Claim 17 were rejected as being anticipated by U.S. Patent No. 4,554,418 to Toy. In contrast to Toy, claim 17 features a system that includes means for an internal user of a financial message delivery system to designate internal user message preferences, view internal user messages, reply to client user messages, create messages, and search for messages for a client user. Toy does not disclose such a system. The Toy system is discussed solely as an automated system for generating user messages; it does not provide for any user generated messaging, and is completely devoid of any internal user functionality, including internal user preferences. Accordingly, Toy does not disclose or suggest any one of the internal user functions of claim 17.

The Examiner asserts that Toy discloses the internal user functions of claim 17, with reference to Toy's step 110 and 122. The Examiner is incorrect. Toy's step 110 relates to obtaining customer specified conditions (see col. 5, line 16-17), and step 122 relates to checking if a security is within a customer specified list (see col. 8, lines 20-26). These are not the claimed internal user functions. The Examiner further asserts with reference to col. 7, line 48-col. 8, line 65 that a system with a multiplicity of input lines and associated communications to accommodate all information services of interest discloses such features. The Examiner is further incorrect. The Applicant fails to see how a description of a computer network can teach the claimed internal functions, such as means for designating internal user message preferences, means for viewing client user and internal user messages, for replying to client user messages, and for searching messages for a client user.

C. GROUP THREE CLAIMS

The Examiner summarily rejects many of the dependent claims without any explanation for the rejection. To support a rejection under 35 U.S.C. § 120, the Examiner must make out a *prima facie* case that each and every limitation of the claimed invention is taught by a single reference. See MPEP 2112.01. In this respect, the fails to make a *prima facie* case insofar as the Examiner fails to identify where the limitations of pending claims 4-16 and 19-21 appear

in Toy. Indeed, the Examiner rejected the group three claims without even acknowledging their existence.

IX. CONCLUSION

In view of the foregoing, it is believed that all pending claims 1-21 are in proper condition for allowance, and the Board is respectfully requested to overturn the Examiner's rejection of these claims.

Date: Jan 24, 2005

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I hereby certify that this paper and any accompanying papers referenced herein are being deposited this date with the U.S. Postal Service as First Class Mail with sufficient postage addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Antonio Papageorgiou — Date: January 24, 2005

IX. APPENDIX

(A) Claims Currently Pending

1. A computer system for delivering ~~a~~ at least one financial message to a client user regarding financial activity, the computer system comprising at least one computing device comprising:

a registration system program configured to register a client user and determine messages to be received by the client user;

a message creation system program configured to monitor financial activity, create messages as requested by the client user regarding the activity and deliver messages; and

an intervention system program configured to allow an internal user of the system to at least one of add to and edit content of a message to a client user prior to delivery.

2. The system as recited by claim 1, wherein the registration system program includes a registration interface module configured to create a client user preference designation interface to determine the messages to be received by the client user.

3. The system as recited by claim 1, the at least one computing device further comprising a program for providing a user message inbox for viewing a client user message.

4. The system as recited by claim 1, wherein the system is accessible by the client user from an online financial transaction forum.

5. The system as recited by claim 1, the at least one computing device further comprising an internal user interface system program.

6. The system as recited by claim 5, wherein the internal user interface system program comprises a financial advisor interface module configured to provide:

an advisor client user preference designation interface for designating client user preferences;

an advisor preference interface for designating advisor message preferences; and

an advisor message inbox for viewing client user or advisor messages.

7. The system as recited by claim 5, the at least one computing device further comprising a program providing a client user searching mechanism.

8. The system as recited by claim 5, the at least one computing device further comprising a reporting system program for generating reports.

9. The system as recited by claim 5, the at least one computing device further comprising a program for providing a user list edit interface which prevents delivery of a message to the client user.

10. The system as recited by claim 5, the at least one computing device further comprising a program for providing a manager user message viewing interface.

11. The system as recited by claim 5, the at least one computing device further comprising a program for providing a client service agent interface including a message viewing interface.

12. The system as recited by claim 5, the at least one computing device further comprising a program for providing a marketing interface including a disclaimer interface, a message type creating interface and a message template editing interface.

13. The system as recited by claim 1, further comprising a market feed for supplying market data.

14. The system as recited by claim 1, the at least one computing device further comprising a security and authentication system program for controlling access to and within the system.

15. The system as recited by claim 1, the at least one computing device further comprising a program for providing at least one of an on-line chat system, a video conference system and a webcasting system.

16. The system as recited by claim 1, wherein the messages are deliverable via electronic mail, facsimile, telephone, or wireless device.

17. An internal user interface system for an internal user of a financial message delivery system, the interface system comprising:

means for designating internal user message preferences;

means for designating client user message preferences;

means for viewing client user or internal user messages;

means for replying to client user messages;

means for creating messages; and

means for searching for messages for a client user.

18. A computerized method for delivering a financial message to a client user in a financial communication system, comprising the steps of:

gathering client user message preferences from the client user;

creating a client user message in accordance with the client user message preferences; and

providing a user interface allowing an internal user to add a personalized note to the client user message prior to delivery.

19. The method as recited by claim 18, wherein the step of gathering client user message preferences comprises providing a user interface for an internal user designation of the client user message preferences.

20. The method as recited by claim 18, wherein the step of creating a client user message comprises the steps of monitoring financial activity and preparing a client user message regarding the financial activity.

21. The method as recited by claim 18, further comprising the step of reviewing messages prior to delivery for regulatory compliance.

(B) **Newton's Telecom Dictionary**

NEWTON'S TELECOM DICTIONARY

The Official Dictionary of
Telecommunications & the Internet

16th Updated, Expanded and Much Improved Edition

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NEWTON'S TELECOM DICTIONARY

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Format 1. Arrangement of bits or characters within a group, such as a word, message, or language.
2. Shape, size and general makeup of a document. As a verb, its most common usage is in "to format this disk."

Fortezza A cryptology mechanism developed by Mykotronx, Inc., a subsidiary of Rainbow Technologies, in conjunction with the NSA (the National Security Agency), which holds the registered trademark. The family of FORTEZZA security products includes PCMCIA-based client cards, and server boards; compatible implementations are available variously in hardware and software. All FORTEZZA Crypto implementations support data privacy, user ID authentication, data integrity, non-repudiation, and timestamping. FORTEZZA is the crypto token chosen to secure the Defense Messaging System (DMS), including both the MILNET and the Internet. Applications include e-mail, voice communications and file transfer. Depending on the application, the encryption keys are either 80 or 160 bits in length, thereby providing excellent security for "Sensitive But Unclassified" (SBU) government data, as well as for commercial applications. FORTEZZA opponents suggest that the NSA is attempting to force the mechanism on the private sector as a replacement for the rejected Clipper Chip technology. The fear is that the NSA holds the keys to the secret encryption algorithm, and that the agency, therefore, can gain access to your data even more easily that it could have through the "backdoor" built into the Clipper Chip. See also Clipper Chip and MISSI. www.nsa.gov

FORTRAN FORmula TRANslating system. A computer programming language.

Fortuitous Conductor Any conductor that may provide an unintended path for intelligible signals, e.g., water pipes, wire or cable, metal structural members.

Fortune Cookie An inane/witty/profound comment that can be found around the Internet.

Forum A section within an online service (such as CompuServe, America Online, etc.) where you can find out information on a specific subject — computers made by Toshiba or printers made by Hewlett Packard. Forums may include a library from which you can download various files (programs, bug fixes, printer drivers, text, press releases of new products and so on). Many forums also include one or more "conference rooms" which users may "enter" for conversations (on-line or off-line) with representatives of companies or the person running the forum, who is typically called the "sysop," as in system operator. Most manufacturers run forums as a relatively cheap and painless way of getting help information to their customers.

Forward A switch feature that temporarily redirects incoming calls. The incoming calls are redirected from the forwarding telephone to another destination by the person associated with the telephone or by the computing domain. The other destination has previously been defined to the switch by the device associated with the telephone.

Forward Busying That feature of a telecommunications system wherein supervisory signals are forwarded in advance of address signals to seize assets of the system before attempting to establish a call.

Forward Channel The communications path carrying data or voice from the person who made the call. The Forward Channel is the opposite of the Reverse Channel.

Forward Direction The forward direction of data away from the head-end in a broadband LAN.

Forward Disconnect Disconnecting of a call path as a result on the called party hanging up. Prior to forward disconnect the called party could not initiate a disconnect of call. This was the first denial of service attack, call someo that you don't like and then don't hang up and the call is ne torn down and their phone is useless.

Forward Echo An echo propagating in the same directi as the original wave in a transmission line, and formed energy reflected back from one irregularity and then onw again by a second. Forward echoes can occur at all irregul ities in a length of cable, and, when they add systematica can impair its performance as a transmission medium.

Forward Error Correction FEC. A technique of e detection and correction in which the transmitting host c puter includes some number of redundant bits in the payl (data field) of a block or frame of data. The receiving de uses those bits to detect, isolate and correct any errors cre in transmission. The idea of forward error correction is to a... having to retransmit information which incurred errors in network transit. The additional bits add a small amount of overhead to the block or frame. Therefore, they create some level of inefficiency in transmission. The alternative is retransmission of the block or frame of data, which can be much more inefficient where large numbers of errors occur during transmission. This inefficiency is compounded when the retransmitted block or frame is errored, as well. From the standpoint of network throughput, FEC can be much more effective, particularly when bandwidth is expensive or limited. On the other hand, FEC is processor-intensive, as it places a load on the computational capabilities of the receiving computer. The simple idea of forward error correction is to avoid having to retransmit information sent incorrectly. The technique is consuming of bandwidth and can make the transmission take longer.

I asked Ray Horak, how can a few redundant bits of informaiton significantly reduce error rates on transmission. Here's his reply: The process is extraordinarily complex. Explaining it would take pages and pages and would do no one but a mathematician any good. Essentially, a few redundant data bits are added at strategic places in the data field (for example, just suppose that every 50th bit were repeated — the exact repeated bits vary according to the specific algorithm used). The very few redundant bits significantly lower the potential for an individual data bit to be transmitted in error and go undetected, given the complex sampling technique and complex algorithms used to develop a description of the data field. The receiving host computer is intelligent enough and has enough computational horsepower at its disposal to figure it out, unlike most of us real human types. The issue and the tradeoff is one of the cost of processing power vs. the cost of retransmission across the network. As the cost of computers comes down and the cost of bandwidth comes down, the best solution remains specific to the specifics of the user and the application.

Forward Prediction A technique used in video compression, specifically compression techniques based on motion compensation, where a compressed frame of video is reconstructed by working with the differences between successive video frames.

Forwarding Description An ATM term. The resolved mapping of an MPOA Target to a set of parameters used to set up an ATM connection on which to forward packets.

FOSSIL Fido/Opus/Seadog Standard Interface Layer. This is the interface used as an add-on to mailer software packages to connect them to PCs that are not 100% IBM-compatible.

FOTS Fiber Optic Transmission System. Not the same as POTS. But a neat acronym, nevertheless.

for PBXs and networks. Used when traffic is random and there is queuing. It assumes that all callers will wait indefinitely to get through. Therefore offered traffic (see ERLANG) cannot be bigger than the number of trunks available (if it is, more traffic will come in than goes out, and queue delay will become infinite). Erlang C is not a perfect traffic engineering formula. There are none that are.

Erlang Formula A mathematical way of making predictions about randomly arriving work-load (such as telephone calls) based on known information (such as average call duration). Although traditionally used in telephone traffic engineering (to determine the required number of trunks), Erlang formulas have applications in call center staffing as well. See Erlang.

ERMES 1. European Radio MEssaging System.
2. One of the communications protocols used between paging towers and the mobile pagers/receivers/beepers themselves. Other protocols are POCSAG, ERMES, FLEX, GOLAY and REFLEX. The same paging tower equipment can transmit messages one moment in GOLAY and the next moment in ERMES, or any of the other protocols.

ERP 1. Effective Radiated Power.
2. Enterprise Resource Planning. Software which links together back-office computer systems such as manufacturing, financial, human resources, sales force automation, supply-chain management, data warehousing, document management, and after-sales service and support. Such systems typically run on networks of PCs. These often replace older mainframe-based systems. ERP software typically makes heavy use of telecommunications.

Error Burst A sequence of transmitted signals containing one or more errors but regarded as a unit in error in accordance with a predefined measure. Enough consecutive transmitted bits in error to cause a loss of synchronization between sending and receiving stations and to necessitate resynchronization.

Error Checking And Correction Error checking is the process of checking a "packet" being transmitted over a network to determine if the package, or the data content within the package, has been damaged. If checked and found wanting, damaged packets are discarded. Error correction is the process of correcting the damage by resending a copy of the original packet. In public frame relay services, the network performs the function of error checking, but not error correction. That function is left to the intelligent end equipment (at the user's site).

Error Control Various techniques which check the reliability and accuracy of characters (parity) or blocks of data sent over telecommunications lines. V.42, MNP and HST error control protocols (three common dial-up phone line modem protocols) use error detection (CRC) and retransmission of errored frames (ARQ). See Error Control Protocols.

Error Control Protocols Besides high-speed modulation protocols, all current models of high-speed dial-up modems also support error control and data compression protocols. There are two standards for error control protocols: MNP-4 and V.42. The Microcom Networking Protocol, MNP, was developed by Microcom. MNP 2 to 4 are error correction protocols. V.42 was established by ITU-T. V.42 actually incorporates two error control schemes. V.42 uses LAP-M (Link Access Procedure for Modems) as the primary scheme and includes MNP-4 as the alternate scheme. V.42 and MNP-4 can provide error-free connections. Modems without error control protocols, such as most 2400 bps Hayes-compatible modems, cannot provide error-free data communications. The noise and other phone line anomalies are beyond the capabilities of any standard modem to deliver error-free data. V.42 (and MNP 2-4) copes with phone line impairments by filtering out the line noise and automatically retransmitting corrupted data. The filtering process used by V.42 (and MNP 2-4) is similar to the error correction scheme used by file transfer protocols (such as XMODEM). The two modems use a sophisticated algorithm to make sure that the data received match with the data sent. If there is a discrepancy, the data is re-sent.

What is the difference between error control protocols (such as V.42) and file transfer protocols (such as XMODEM)? For one thing, file transfer protocols provide error detection and correction only during file transfers. File transfer protocols do not provide any error control when you are reading e-mail messages or chatting on line. Even though an error control protocol is "on" all the time, we still need file transfer protocols when two modems establish a reliable link. A modem works with bit streams, timing and tones. It does not understand what a file is. When you download or upload a file, your communications software needs to take care of the details related to the file: the filename, file size, etc. This is handled by the file transfer protocol which does more than error-checking.

The other benefit of V.42 (or MNP-4) is that it can improve throughput. Before sending the data to a remote system, a modem with V.42 (or MNP-4) assembles the data into packets and during that process it is able to reduce the size of the data by stripping out the start and stop bits. A character typically takes up 1 start bit, 8 data bits and 1 stop bit for a total of 10 bits. When two modems establish a reliable link using V.42 or MNP-4, the sending modem strips the start and stop bits (which subtracts 20% of the data) and sends the data to the other end. The receiving modem then reinserts the start and stop bits and passes the data to the computer.

Therefore, even without compressing the data you can expect to see as much as 1150 characters per second on a 9600 bps connection. Although the modem subtracts 20% of the data the speed increase is less than 20% due to the overhead incurred by the error control protocol.

The above definition with great thanks to modem expert Patrick Chen.

Error Correcting Protocol A method of transmitting b streams in a mathematical way such that the receiving com puter verifies to the sending computer that all bits have bee received properly. SNA and XMODEM protocols, in the mainframe and microcomputer environments respectively, are Error Correcting Protocols. See Error Control Protocol.

Error Correction Code In computers, rules of code construction that facilitate reconstruction of part or all of a message received with errors.

Error Correction Mode A method of transmitting and receiving data that eliminates errors.

Error Free Second A Bellcore (now Telcordia Technologies) definition. An error free second is, surprise, surprise, a one second time interval of digital signal transmission during which no error occurs. That's it.

Error Level A numeric value set by some programs that you can test with the errorlevel option of the "If" batch command. It works as follows. Some programs set the DOS errorlevel to a certain number depending on a certain input or response to an event. Let's say when you type the letter "Y" in response to a question the errorlevel is set to 32. Once this is done, you may condition other events based upon this number using an If command in a batch file. You can say "IF ERRORLEVEL = 32

access line to protect connected equipment from over-voltage and/or over-current. Hazardous voltages and currents are shunted to ground. In other words, a surge protector limits unwanted surge voltages to values which can be handled safely by the insulation on inside wire and by the electronics in the customer terminal equipment. Protectors are very important in high-lightning areas, where they (theoretically) keep wires and phones from melting, phone systems from being blown off the wall, and end users from being electrocuted.
The original protectors were based on carbon blocks which effectively blocked aberrant voltage surges. Subsequently, gas tube protectors were used. Solid state protectors were the third generation. Improvements in the speed of of reacting to incoming high voltage and high currents have been at the forefront of the improvements in technology. While all variety of protectors currently are in place, those currently being deployed are either solid-state or hybrids, which incorporate both gas tube and solid-state technology. Protectors often are an element of a multi-function NID (Network Interface Device), also known as a NIU (Network Interface Unit), which acts as the point of demarcation between the local exchange carrier and the customer premise.

PROTEL PRocedure Oriented Type Enforcing Language. Protel is a block-structured, type-enforcing, high level, software language that enables extensive type checking on the source code at compile time. It was developed at Bell Northern Research, a subsidiary of Northern Telecom. Protel is used in the DMS-100, a family of Northern Telecom central office telephone switches. Both the central control CPU and the DMS SuperNode CPU are programmed in Protel.

Protn Protection. See Protector Block.

Protocol A protocol is a set of rules governing the format of messages that are exchanged between computers and people. Imagine making a phone call. You pick up the phone, listen for dial tone, then punch out some buttons on your phone, then listen for ringing and for an answer. The person says "Hello." You say "Hello." Then you talk... What you're doing is following a protocol to make a call. When computers make calls between themselves — to transfer data, for example — they follow a protocol. They aren't smart, like you and I. They can't distinguish between dial tone and fast busies, unless those sounds and signals are specifically defined. A protocol defines the procedure for adding order to the exchange of data (i.e. a "conversation.") A protocol is a specific set of rules, procedures or conventions relating to format and timing of data transmission between two devices. It is a standard procedure that two data devices must accept and use to be able to understand each other. The protocols for data communications cover such things as framing, error handling, transparency and line control. There are three basic types of protocol: character-oriented, byte-oriented and bit-oriented.
Protocols break a file into equal parts called blocks or packets. These packets are sent and the receiving computer checks the arriving packet and sends an acknowledgement (ACK) back to the sending computer. Because modems use phone lines to transfer data, noise or interference on the line will often mess up the block. When a block is damaged in transit, an error occurs. The purpose of a protocol is to set up a mathematical way of measuring if the block came through accurately. And if it didn't, ask the distant end to re-transmit the block until it gets it right. See PROTOCOLS for a list of the more common protocols. See the following protocol definitions. See also Handshaking and Line Discipline.

Protocol Analyzer A specialized computer and/or program that hooks into a LAN and analyzes its traffic. Good protocol analyzers can record and display data on all levels of traffic on a LAN cable, from the lowest media access control packets to NetBIOS commands and application data. They are excellent for diagnosing network problems, but they require some expertise, as their data output can be obscure.

Protocol Control Protocol Control is a mechanism which a given application protocol may employ to determine or control the performance and health of the application. Example, protocol liveness may require that protocol control information be sent at some minimum rate; some applications may become intolerable to users if they are unable to send at least at some minimum rate. See MCR.

Protocol Control Information PCI. the protocol information added by an OSI (Open Systems Interconnection) entity to the service data unit passed down from the layer above, all together forming a PDU (Protocol Data Unit).

Protocol Conversion A data communications procedure which permits computers operating with different protocols to communicate with each other. See Protocol and Protocol Converter.

Protocol Converter A device which does protocol conversion. It's your classic "black box." Glasgal Communications defines a protocol converter as any device which translates a binary data stream from one format to another according to a fixed algorithm. Compare with bridge and gateway, which are different animals and may contain protocol converters...and more.

Protocol Data Unit See PDU.

Protocol Dependent Routing Any routing method in which routing decisions are made on the basis of information provided by the specific LAN protocol used by the communicating devices. TCP/IP and DECnet routers are protocol dependent routers. So are so-called multi protocol routers, because they must support each protocol running in the network. See also Protocol Independent Routing.

Protocol Filtering A feature available in some network bridges which allows it to be programmed to always forward or reject transmissions associated which specified protocols.

Protocol Independent Router A routing device that provides the functionality of protocol specific routers such as TCP/IP or DECnet routers but is independent of protocols. In addition to routing "routable" protocols like TCP/IP, DECnet or XNS, it routes IBM protocols which are not routable. The protocol independent router combines the latest in computer hardware with the new advanced routing technologies such as SPF (Shortest Path First) and IS-IS (OSI routing standard). It represents an alternative to conventional routers that use old routing technologies and are protocol dependent. Protocol independent routers provide easy-to-install-and-use enterprise-wide networks in a token ring or Ethernet environment.

Protocol Independent Routing A routing method in which routing decisions are made without reference to the protocol being used by the communicating devices. Protocol independent routers provide the functionality of protocol specific routers such as TCP/IP or DECnet routers, but can also route non-routable protocols. See also Protocol Independent Router.

Protocol Mapper Protocol Mappers are employed when a logical server is delivering a proprietary CTI protocol and/or providing connections through a proprietary transport protocol. Mappers deliver one of the specified CTI Protocols by first mapping, or translating, from the non-specified proprietary protocol.

Protocol Mapper Device Implementation of a Proto

Mapper as device which s
transparent to the logical cl
Protocol Mapper Co
Mapper as a software comp
mimic transport protocol st
appropriate R/W interface,
protocol stack and are trans
See Protocol Mapper.
Protocol Stack First, re
col is. Understand that a p
procedures or conventions
transmission between two d
for "conversations" — voic
computers. A protocol stack
ules of software that togethe
that enables the protocol to
tions between dissimilar co
because the software modu
The process of communica
of the pile and works itself u
ly (not always) needs the c
protocol stack — such as th
specific protocol standard
TCP/IP protocol stack incl
FTP, SMTP, telnet, and so o
a protocol family or protoco
Protocol Suite A hierarc
Protocols For an explana
Here are the more common
MODULATION PROTOCOL
Bell 103: Low Speed (30
Bell 212: Low Speed (12
ITU-T V.22bis: Medium
ITU-T V.32: Medium Sp
ITU-T V.32bis: High Spe
ITU-T V.34: High Speed
ERROR CONTROL PROTO
Microcom Network Prot
ITU-T V.42 (Includes LA
DATA COMPRESSION PR
MNP/5
ITU-T V.42bis
All data compression requ
protocol.
FILE TRANSFER PROTOC
Kermit: 7-bit data path, c
XMODEM: 8 bit data pat
YMODEM: 8-bit data pat
ZMODEM: 8-bit data path
Proton A Proton is a heavy
positive charge. Protons are
Prototyping The develop
the appearance and behavior
to be built. A prototype may
tion's. It may also demonstra
or it may even accept input
retrieved from a simulated
development.)
Provider A process that rep
Sun Solaris Teleservices plat
device, such as a telephone
instances of a provider can b
same information. Each config
primary alias. A primary alias

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Date	January 24, 2005	Reg. No.	53,431

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